

ABSTRACT OF THE DISCLOSURE

A Time Dependent Dielectric Breakdown (TDDB) test pattern circuit, which can reduce testing time and statistically improve a precision of measurement as well as a method for testing the test pattern circuit are discussed. Typically, a test pattern circuit includes in plurality of unit test patterns. Each unit test pattern includes a capacitor connected to a stress voltage. The stress voltage is applied to the capacitor and the current flowing from the capacitor is measured over time. The dielectric in the capacitor breaks down over time and at a certain point, the current from the capacitor changes suddenly. Unfortunately, the convention test pattern circuit requires serial testing of each unit cell, and therefore, the measuring time is significant when there are many unit cells involved. The circuit allows for the measurements to take place simultaneously for all unit cells within the test pattern circuit. This greatly reduces the testing time, allows for greater amount of data to be obtained which improves the statistically accuracy, and reduces costs as well.

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